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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/637,821	08/11/2000	Keith O. Johnson	PACIF-55288	7950
22801	7590	06/16/2005	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			MICHALSKI, JUSTIN I	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/637,821

Applicant(s)

JOHNSON ET AL.

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 and 55-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 and 55-63 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 13 and 37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 13 includes the newly added limitation "and another said filter simulating the enclosure". Claims 37 includes the newly added limitation "and another said filter simulates the enclosure". The Applicants remarks state on page 18, lines 16-17 and page 20, lines 13-14 that support can be found at page 12 and beginning at page 14 of the specification. The Office could find no such support for a filter simulating the enclosure also noting filters 24 of Fig. 2.
3. Claim 55 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 55 includes the limitation "at least one said filter, which corresponds to an individual component of the sonic reproduction device, is replaceable with another filter in response to replacement of the individual component of

the sonic reproduction device with another individual component, wherein the other filter simulates a behavioral characteristic of the other individual component". The applicants' remarks state on page 21, line 16 that support can be found on page 12 of the specification. The Office found no support for replaceable filters on page 12 of the specification or the drawings.

4. Claims 14-28, 38-44, and 56-63 are dependent on claims 13, 37, and 55 and are therefore also rejected for the reasons as stated above.

Claim Rejections - 35 USC § 102

5. Claims 1-3, 5, 6, 29, 30, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Klippel (US Patent 5,815,585) (Hereinafter "Klippel '585").

Regarding Claim 1, Klippel '585 discloses modifying an electrical audio signal for input to a sonic reproduction device that includes a speaker (1) characterized by a plurality of individual responses which in combination define an overall response for the sonic reproduction device (Fig. 2, filters 19-23 correspond to individual responses (Col. 6, lines 13-45), which includes frequency, time, phase and transient response, said apparatus comprising: a plurality of modification filters (Fig. 2, filters 19-23, Col. 5, lines 5-19 disclose motional signal which will inherently have a mechanical frequency, time, phase, and transient response) having modification responses that simulate the plurality of individual responses, at least one said modification filter simulating an individual component of the speaker (Klippel '585 discloses filters simulating voice coil resistance, voice coil inductance, and force factors; Col. 6. lines 13-45), the modification filters for

receiving the electrical audio signal (8), modifying the electrical audio signal (references 2, 3, and 6) and providing the electrical audio signal to the sonic reproduction device (9 and 10); and a plurality of adjustable parameters (adaptive circuits 19-23), each associated with at least one of the modification filters (19-23) for allowing adjustments to the responses of the modification filters; wherein the adjustments create a plurality of individual conjugate responses (Klippel '585 discloses filter inverse transfer characteristics; Col. 1, lines 1-6), each individual conjugate response associated with at least one of the plurality of individual responses.

Regarding Claim 29, Klippel '585 discloses a sonic reproduction device having associated mechanical, acoustic and electromagnetic behavioral characteristic (Klippel '585 discloses voice coil resistance, voice coil inductance, and force factors; Col. 6. lines 13-45); a source for outputting an electrical audio signal to a model of the sonic reproduction device (speaker 1), the model having a plurality of filters that simulate at least one of the mechanical, acoustic, and electromagnetic behavioral characteristics of the sonic reproduction device, at least one said filter simulating an individual component of a speaker of the sonic reproduction device, the plurality of filters providing an overall response of the sonic reproduction device (Col. 1, line 61) that includes frequency, time, phase, or transient response, the model outputting the electrical audio signal to the sonic reproduction device (Klippel '585 discloses filters simulating voice coil resistance, voice coil inductance, and force factors which will inherently include mechanical frequency, time, phase, or transient responses; Col. 6. lines 13-45); and a controller (adaptive detector circuit 2 and adaptive circuits 19-23) that modifies the responses of

the filters to transform the model into a conjugate model having a plurality of filters with responses that comprise conjugates to the original response of the filter (Klippel '585 discloses filter inverse transfer characteristics; Col. 1, lines 1-6).

Regarding Claim 2, Klippel '585 further discloses the plurality of individual responses (Klippel '585 discloses simulating voice coil resistance, voice coil inductance, and force factors; Col. 6, lines 13-45) of the sonic reproduction device are related to mechanical, acoustic, and electromagnetic behavior of the sonic reproduction device.

Regarding Claims 3 and 30, Klippel '585 further discloses filters defined by digital processes (Col. 2, lines 39-41) which are inherently controlled by a computer.

Regarding Claims 5 and 32 Klippel '585 further discloses (Fig. 2) filters 19-23 are independent of each other (i.e. non-interacting).

Regarding Claim 6, Klippel '585 further discloses the plurality of modification responses combine to form an overall transfer characteristic (i.e. response) that is a conjugate to the overall response for the sonic reproduction device (Col 1, lines 58-60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 7, 8, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klippel '585.

Regarding Claims 4 and 31, Klippel '585 discloses use of filters but does not disclose the filters being analog circuits. However, it is well known in the art that filters can be constructed with analog components.

Regarding Claims 7, 8, and 33 Klippel '585 discloses use of modification filters but does not explicitly disclose cut-off filters. It is inherent that the filters will have a cut-off frequency at some values in order to modify the audio signal. It is well known in the art the center frequency of a filter is related to the Q factor by $Q=f_o/BW$ where f_o is the center frequency and BW is the bandwidth. It is inherent that frequency response of the filter will be responsive to center frequency and Q parameter.

8. Claims 9, 10, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klippel '585 above in view of Simeau (US Patent 4,223,181).

Klippel '585 discloses an apparatus above but does not disclose the use of a constant slope equalizer filter. It is well known in the art that filters (i.e. equalizers) have constant slope responses to attenuate frequencies outside of a pass band as disclosed by Simeau with a constant slope of 18 dB/octave (Col. 4, lines 48-51).

9. Claims 11, 12, 35, and 36, are rejected under 35 U.S.C. 103(a) as being unpatentable over Klippel '585 above in view of Finn et al. (US Patent 6,295,364) (Hereinafter "Finn").

Regarding Claims 11, 12, 35, and 36, Klippel '585 discloses an apparatus as disclosed above but does not disclose use of a parametric notch filter. Finn discloses

filters corresponding to the inverse of the speaker transfer function (Col 3, lines 25-30) including the use of notch filters (Col 2, lines 40-55) to reduce resonance peaks.

Therefore, it would have been well known in the art at the time the invention was made to include notch filters to reduce resonance peaks in the audio output. It is well known in the art the center frequency of a filter is related to the Q factor by $Q=f_0/BW$ where f_0 is the center frequency and BW is the bandwidth. It is inherent that frequency response of the filter will be responsive to center frequency and Q parameter

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (571)272-7524. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM



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SUPERVISORY PATENT EXAMINER